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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,220	07/12/2001	Yurong Shi	TT4869	5200

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EXAMINER	
KOSOWSKI, ALEXANDER J	

ART UNIT	PAPER NUMBER
2125	

DATE MAILED: 04/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/905,220	Applicant(s) SHI ET AL.	
	Examiner Alexander J Kosowski	Art Unit 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1) Claims 1-31 are presented for examination.

Claim Rejections - 35 USC § 102

2) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3) Claims 1-31 are rejected under 35 U.S.C. 102(e) as being unpatentable by Nulman (U.S. Pat 6,303,395).

Referring to claim 1, Nulman discloses a method comprising the steps of entering semiconductor process parameters into a statistical process control system and configuring an equipment interface, using the statistical process control system, to collect the semiconductor process parameters (col. 8 lines 5-8 and col. 9 lines 29-31, whereby the MES environment contains a metrology controller, which collects semiconductor process parameters for the SPC system).

Referring to claims 2 and 3, Nulman discloses that the step of configuring includes providing a data collection plan to the equipment interface, and that the data collection plan is provided in response to a request from the equipment interface (col. 8 lines 5-8, whereby the metrology controller must request information from the various metrology tools, and whereby the controller must be programmed for data collection parameters such as a desired sampling frequency, etc.).

Referring to claim 4, Nulman discloses the step of selecting entering parameters includes referencing a data collection capability specification accessible to the statistical process control system (col. 8 lines 5-8, whereby the metrology controller would be programmed with a data collection capability based on the metrology tools it controls).

Referring to claim 5, Nulman discloses measuring a process parameter on a semiconductor wafer, the process parameter measured in accordance with the data collection plan, and providing the process parameter to the statistical process control system through the equipment interface (col. 8 lines 5-8 and col. 9 lines 29-31).

Referring to claim 6, Nulman discloses that the step of measuring includes providing a trigger to a metrology tool from a manufacturing execution system (col. 7 lines 53-67 and col. 8 lines 1-14, whereby the MES encompasses the metrology controller, which triggers metrology tools to collect process parameters).

Referring to claim 7, Nulman discloses a method comprising the steps of establishing a data collection plan using a statistical process control system, the data collection plan identifying data to collect from a semiconductor tool (col. 8 lines 5-8 and col. 9 lines 29-31, whereby the metrology controller must request information from the various metrology tools, and whereby the controller must be programmed for data collection parameters such as a desired sampling frequency, etc.), and providing the data collection plan to an equipment interface of the semiconductor tool through the statistical process control system (col. 8 lines 5-8 and col. 9 lines 29-31, whereby the MES environment contains a metrology controller, which collects semiconductor process parameters for the SPC system).

Referring to claim 8, Nulman discloses that the step of providing is performed in response to a request from the equipment interface (col. 8 lines 5-8, whereby the metrology controller must request information from the various metrology tools).

Referring to claim 9, Nulman discloses that the step of establishing includes referencing a data collection capability specification accessible to the statistical process control system (col. 8 lines 5-8, whereby the metrology controller would be programmed with a data collection capability based on the metrology tools it controls).

Referring to claims 10 and 11, Nulman discloses the step of performing a measurement consistent with the data collection plan, wherein the step of performing a measurement includes providing a trigger to a metrology tool from a manufacturing execution system (col. 7 lines 53-67 and col. 8 lines 1-14, whereby the MES encompasses the metrology controller, which triggers metrology tools to collect process parameters).

Referring to claims 12-16, the claims vary from claims 7-11 only in that they claim a computer readable medium tangibly embodying a program of instructions, rather than a method. The method taught by Nulman with respect to claims 7-11 could inherently be applied to a computer readable medium tangibly embodying a program of instructions. Therefore, referring to claims 12-16, see rejection of claims 7-11, respectively, above.

Referring to claim 17, Nulman discloses a system comprising a user interface to receive a capability specification identifying a data collection capability of a semiconductor tool (col. 8 lines 5-8, whereby the metrology controller would be programmed with a data collection capability based on the metrology tools it controls), to receive a data collection plan, the data collection plan used in conjunction with the capability specification to identify data to be

collected from a semiconductor tool (col. 8 lines 5-8, whereby the metrology controller must be programmed for data collection parameters such as desired sampling frequency, etc) and receive a process control strategy (col. 8 lines 49-53), a communications port to configure an equipment interface of a semiconductor tool to collect measurement data from the semiconductor tool and a communications port to obtain measurement data from the equipment interface (col. 7 lines 53-67 and col. 8 lines 1-14, whereby all aspects of the system may communicate with each other), a data broker to receive the measurement data from the communications port and provide the measurement data to a statistical process client (col. 8 lines 55-61), and a statistical process client to evaluate the measurement data in accordance with the process control strategy (col. 10 lines 1-19).

Referring to claims 18 and 19, Nulman discloses a communications port to provide control signals to a manufacturing execution system, whereby the control signals are provided by the statistical process client in response to an evaluation of the measurement data (col. 7 lines 53-67 and col. 8 lines 1-14 and col. 10 lines 19-38).

Referring to claim 20, Nulman discloses that the user interface is a graphical user interface (col. 9 lines 29-37).

Referring to claim 21, Nulman discloses that the user interface is an Internet interface (col. 9 lines 54-57).

Referring to claims 22-23, Nulman discloses a data history client wherein the data broker is further to provide the measurement data to the data history client and wherein the data history client is to provide the measurement data to a non-volatile storage medium (col. 9 lines 51-53).

Referring to claim 24, Nulman discloses a method comprising the steps of receiving, at a statistical process control system, a capability specification identifying a data collection capability of a semiconductor tool (col. 8 lines 5-8 and col. 9 lines 29-31, whereby the metrology controller would be programmed with a data collection capability based on the metrology tools it controls), receiving a data collection plan at the statistical process control system, the data collection plan used in conjunction with the capability specification to identify data to be collected from a semiconductor tool (col. 8 lines 5-8 and col. 9 lines 29-31, whereby the metrology controller must request information from the various metrology tools, and whereby the controller must be programmed for data collection parameters such as a desired sampling frequency, etc.), configuring an equipment interface, using the statistical process control system, to collect measurement data from the semiconductor tool and obtaining measurement data from the semiconductor tool (col. 8 lines 5-8 and col. 9 lines 29-31, whereby the MES environment contains a metrology controller, which collects semiconductor process parameters for the SPC system), providing the measurement data to a statistical process control system through a data broker, the statistical process client being part of the statistical process control system (col. 8 lines 55-61), receiving a process control strategy at the statistical process control system and evaluating the measurement data in accordance with the process control strategy using the statistical process control client (col. 10 lines 1-19).

Referring to claim 25, Nulman discloses the step of verifying that the process control strategy is consistent with the data collection plan, wherein the verifying is performed using the statistical process control system (col. 8 lines 5-8 and col. 9 lines 29-31, whereby the metrology controller must request information from the various metrology tools, and whereby the controller

must be programmed for data collection parameters such as a desired sampling frequency, etc., and could inherently verify that the current strategy is consistent with the data collection plan).

Referring to claim 26, Nulman discloses that the step of configuring includes providing a data collection plan to the equipment interface (col. 8 lines 5-8 and col. 9 lines 29-31, whereby the MES environment contains a metrology controller, which collects semiconductor process parameters for the SPC system when prompted to do so).

Referring to claim 27, Nulman discloses that the data collection plan is provided in response to a request from the equipment interface (col. 8 lines 5-8, whereby the metrology controller must request information from the various metrology tools).

Referring to claim 28, Nulman discloses that the step of obtaining includes providing a trigger to the semiconductor tool from a manufacturing execution system (col. 7 lines 53-67 and col. 8 lines 1-14, whereby the MES encompasses the metrology controller, which triggers metrology tools to collect process parameters).

Referring to claims 29-31, Nulman discloses that the capability specification, the data collection plan and the process control strategy are received via a common user interface (col. 9 lines 29-37), that the user interface is a graphical user interface (col. 9 lines 29-37), and that the user interface is an Internet interface (col. 9 lines 54-57).

Conclusion

4) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander J Kosowski whose telephone number is 703-305-3958. The examiner can normally be reached on Monday through Friday, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 703-308-0538. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7239 for After Final communications. In addition, the examiner's RightFAX number is 703-746-8370.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Alexander J. Kosowski
Patent Examiner
Art Unit 2125

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100